

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001595**Date Inspected:** 22-Feb-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei & Chen Xi**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

This Quality Assurance (QA) Inspector observed various fabrication and welding practices at Zhenhua Port Machinery Company (ZPMC) on Changxing Island in Shanghai, China today for the Self Anchored Suspension Bridge for San Francisco, California.

Orthotropic Box Girder (OBG)

In Bay 1 this QA Inspector observed the milling of plate edges, beveling of partial joint penetration (PJP) preparations, machining of 2 millimeter radius on edges of plates and drilling of bolt holes using hardened washer guides of un-bent closed u-rib plates. This QA Inspector also witnessed the simultaneous bending of the close u-rib panels in compliance with the special provisions.

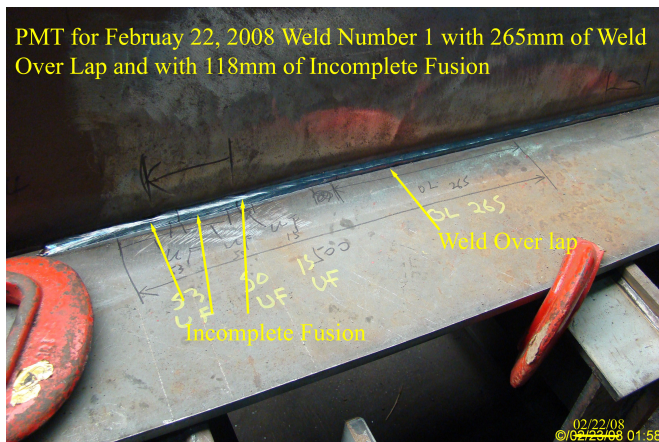
This QA Inspector further witnessed the submerged arc welding (SAW) of the Production Monitor Test (PMT) for Deck Plate DP013-001. Upon completion of the welding it was observed that weld number 1 had 265 millimeters of weld over lap and 118 millimeters of lack of fusion in the 500 millimeter Quality Control selected weld portion causing failure of the test. Welding continued with the SAW process on weld joints W1, W2, W5 & W6 on closed u-ribs U-53 & U-203. Visual examination of these welds was carried out and it was found that W6 failed due to numerous lack of fusion indication along the length of the weld. Two Incident Reports were written on quality control for accepting and bad PMT test and for continuing to weld after a failed production weld was found. The recorded essential variables for both the PMT and production deck plate were checked and found as follows; voltage was 25, amperage 680 and travel speed was 518 millimeters per minute. The preheat temperatures were checked and found to be with in the required parameters.

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The flux core arc welding (FCAW) carried out by ZPMC welder Zhau Cheng Shuang, welder identification 059400 on the closed u-rib weld splice DP001-001-010 between u-ribs U66 and U-337 was witnessed. Welding was being carried to welding procedure specification WPS-B-T-2233-B U2 F and some of the essential welding variables were checked and found to be as follows; voltage 26.1, amperage 208 and travel speed 111 millimeters per minute.

Tack welding of closed u-ribs to deck plate DP062 was observed and some essential welding variables recorded. The ZPMC welder was Shen Qi Zhen, welder identification 059401 using welding procedure specification WPS-B-T-2342 U2 (U-Rib) with welding variables being checked and recorded by ZPMC Quality Control Inspector Duan Yan Bing who is not a Certified Welding Inspector. The essential variables check and recorded by the QA Inspector were as follows; voltage 31.7, amperage 332 amperage and the travel speed was 512 millimeters per minute.



Summary of Conversations:

A conversation was held with the ZPMC Translator Shen Xue Jun and the Certified Welding Inspector Chen Xi concerning the status of the PMT. Mr. Shen asked Mr. Chen at the request of this QA Inspector if ZPMC was accepting or rejecting the PMT. Mr. Shen after speaking with Mr. Chen stated that ZPMC was accepting the PMT visually.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Berger, Bruce
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Quality Assurance Inspector

Reviewed By:	Cochran, Jim
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QA Reviewer
